

February 25, 2010

093-89170

Mr. Stephen Weishar
Remediation & Retained Liabilities Program Manager
LyondellBasell
One Houston Center, Suite 700
1221 McKinney Street
Houston, TX 77010

RE: BEAVER VALLEY SITE ANNUAL INSPECTION

Dear Mr. Weishar:

Golder Associates Inc. (Golder) is pleased to submit this technical memorandum describing the findings from the inspection of the closed former disposal areas: West Landfill Area, East Landfill Area, Raccoon Creek Area and Phthalic Anhydride Area, at the Beaver Valley Site near Monaca, Pennsylvania.

Golder understands that Lyondell Chemical Co., LP (Lyondell) operates a Preparedness Prevention and Contingency Plan (PPC Plan) for the Beaver Valley Site which was prepared in January 2007. Under this PPC Plan Lyondell has to ensure that the areas remain free of environmental concern especially in respect of the potential for pollutants to enter the drainage system (Section C-3 of the PPC Plan), meaning that structural storm water management measures (Section F of the PPC Plan), sediment erosion control measures (Section G of the PPC Plan) and other structural pollution prevention measures need to be evaluated, and that the site is secure (Section C-6 of the PPC Plan). It is understood by Golder that the period for any other required aftercare of the former disposal areas agreed between the former operators of the areas and the Pennsylvania Department of Environmental Protection (PA DEP) is long past.

1.0 SITE INSPECTION

The inspection process followed the approach detailed under Task 1 – Site Inspection and Report, of our proposal entitled “PROPOSAL FOR BEAVER VALLEY SITE ANNUAL INSPECTION – REVISION 1” (P95-89170) dated November 2, 2009. At the request of Lyondell, a short, simple summary of findings was all that was required.

The inspection was performed on November 23, 2009 by Dr. Karin Witton of Golder’s Buffalo, NY office, and involved a visual reconnaissance performed via a site walk over of each of the four areas comprising the Beaver Valley Site: West Landfill Area; Raccoon Creek Area; East Landfill Area and Phthalic Anhydride Area; to determine conditions that are apparent which may represent a potential environmental concern to Lyondell in respect of the requirements of the PPC Plan. Golder staff performed the inspection to the best of their ability, based on their knowledge and experience of closed landfill sites.

Assistance in access to the various areas and background information on previous areas/locations of note was provided by the local NOVA (site) representative Tom DuPlessis to the best of his ability. Mr. DuPlessis accompanied Dr. Witton to the West Landfill Area and to the Raccoon Creek Area.

2.0 SUMMARY OF INSPECTION FINDINGS

2.1 Stormwater Management and Control - Section F of the PPC Plan

Stormwater outfall #23 which serves the West Landfill Area was inspected and no signs of non-stormwater discharge or visible signs of pollutants were observed.

Storm water outfall #24 which serves the East Landfill Area was inspected and no signs of non-storm water discharge or visible signs of pollutants were observed

2.2 Sediment and Erosion Prevention - Section G of the PPC Plan

The West Landfill Area former disposal site had fairly good vegetative cover (estimated to be >95 percent) with only a few areas where vegetation was absent. In some areas, small saplings were growing which suggested that mowing had not been performed in recent time. The integrity of the cap could be compromised if the saplings become larger. A few shallow channels were present across the site as a result of water movement. It is recommended that the vegetative growth and channels continue to be monitored during future inspections to ensure vegetation, especially tree growth, remains at an acceptable level.

The Raccoon Creek Area former disposal area had fairly good vegetative cover (estimated to be >70 percent). The central area had a very low level of vegetative growth suggesting that the soil quality may be compromised in some way which is preventing good growth, although clover and other smaller plants were present. In some areas, small saplings were growing which suggested that mowing had not been performed in recent time. A rectangular area of low vegetative growth was observed on land beyond the former disposal area, towards the Nova Chemicals pump house and the shape suggested a structure of some sort had been in place in recent times. It is recommended that both these areas continue to be monitored during future inspections

A very small section of the fence in the southwestern corner of the Raccoon Creek Area former disposal site appeared to have been burrowed under and this had created a track for either a small animal and/or rain water runoff. The fence was still in good repair and the fence posts did not seem compromised (or likely to be compromised in the near future) however, it is recommended that this section continue to be monitored during future inspections.

The East Landfill Area former disposal sites had fairly good vegetative cover (estimated to be >90 percent) with only a few areas where vegetation was absent on the northern part of the site. There were a few areas where materials such as an old, heavily rusted and empty drum and part of a drum, and polystyrene materials were observed on the surface. These had obviously been in place for a while but were only observable if a person's route directly passed over them. In some areas, small saplings were growing which suggested that mowing had not been performed in recent time. It is recommended that these areas should continue to be monitored during future inspections to establish how vegetation is developing and to assess the likelihood of shrub and tree growth affecting the cap/cover.

Erosion of the stream bed along Poorhouse Run Creek was noted in the Technical Memorandum prepared by CH2MHILL dated September 2, 2008 and was still apparent at the time of the site inspection. The monitoring site referred to the CH2MHILL document as provided to Golder was sought by the field staff. A single metal pin/stake marked with pink tape was found in the bank along Poorhouse Run Creek in the erosion area. The pin was located approximately 10 feet above Poorhouse Run Creek level and could not be physically accessed. A visual estimation of the exposed portion of the pin suggested it was approximately 15 inches from tip to where it entered the bank. As Golder has no information on the original installation date or location of any erosion pins or the depth of those pin(s) on installation into the bank, it is unfortunately impossible to estimate how much erosion has occurred to date. It is recommended this pin continue to be monitored closely during future inspections.

The Phthalic Anhydride Area had fairly good vegetative cover in areas between the former concrete building floor pads which were still present. Of concern was the presence of a sandy/bead-containing material which was located in a series of discrete deposits as well as being more spread around a wooded area in the south of the Phthalic Anhydride Area. The material appeared to be only a surface deposit (as gauged by digging the ground to approximately 2 inches below surface level), however its source, nature and potential for impacting (polluting) rain water runoff is unknown. It is recommended that this area continue to be monitored during future inspections.

Only a limited inspection of the Ohio River from both the West and East Landfill Area sites could be performed due to limited access and high vegetation. No visible impacts on the Ohio River were observed at the time of the site visit from the limited observations possible.

2.3 Security - Section C-6 of the PPC Plan

The West Landfill Area lies within the Nova Chemicals facility which is subject to strictly controlled access. The West Landfill Area was therefore deemed to be secure.

Access to the Raccoon Creek Area (as well as the East Landfill Area and Phthalic Anhydride Area) was controlled by Nova Chemicals via an electronic gate. Some of the fencing around the Raccoon Creek Area former disposal site could not be observed due to heavy shrub and other vegetative growth, however, the majority of the fencing was able to be accessed and appeared secure and in good condition. Trees were present all along the fence line and it is considered that they have the potential to cause damage to the fence in the future if tree limbs fall. It is recommended that tree growth continue to be monitored during future inspections.

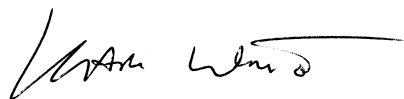
Access to the East Landfill Area and Phthalic Anhydride Area was via the same Nova Chemicals controlled electronic gate and access roadway described above. Fencing was damaged or missing in many locations (see Figure 1 for location reference). One notable area where fencing had collapsed and posts and fencing were missing was along Poorhouse Run Creek which had occurred due to a mixture of stream bed erosion having undercut fencing posts and tree limbs falling on the fence. This section was noted in the Technical Memorandum prepared by CH2MHILL dated September 2, 2008. It is recommended that fencing be installed away from the Creek edge to prevent future damage from creek bed erosion. In other areas, fencing and supporting posts were missing or damaged. It is recommended that fencing be repaired/ replaced on an as-needed basis.

3.0 CLOSING

We look forward to receiving comments on this draft report at your earliest convenience. If you require any further information regarding the site inspection, please do not hesitate to contact us.

Golder appreciates the opportunity to provide our environmental consulting services for this project.

GOLDER ASSOCIATES INC.



Karin E. Witton, Ph.D.
Senior Project Environmental Consultant



David C. Wehn, C.P.G.
Associate/Office Manager

Attachments: Figure 1

KEW/DCW:dml

FIGURE 1

PROJECT
LYONDELLBASELL
BEAVER VALLEY SITES
POTTER TOWNSHIP, BEAVER COUNTY,
PENNSYLVANIA

SITE AREAS AND ITEMS OF NOTE

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